

Amendments to the Claims

Listing of the Claims

The listing of claims will replace all prior versions and listings of claims in the application:

1-61. (Cancelled)

62. (Withdrawn) A kit for introduction of an electric current and/or voltage to a skin portion and/or transdermal or intradermal delivery of substances comprising:

(a) a dermal patch which comprises a power source and at least two electrodes in electrical connection with the power source, said electrodes for electrical coupling with a skin portion of a subject; and

(b) at least one separator for retaining a conductive fluid, said conductive fluid being for deposition on at least one of said at least two electrodes and/or topical application onto the skin portion of the subject, said separator being for preventing contact between the at least one of said at least two electrodes and the skin portion;

said patch being designed and configured for delivering an electric current through the skin and said conductive fluid.

63-65. (Cancelled)

66. (Withdrawn) The kit of claim 62, wherein said electric current is for causing iontophoresis, electrophoresis, electroporation or any combination thereof.

67. (Withdrawn) The kit of claim 62, wherein said at least two electrodes are integrally formed with said power source.

68. (Withdrawn) The kit of claim 62, wherein said power source and said at least two electrodes are the sole constituents of said patch.

69-70. (Cancelled)

71. (Withdrawn) The kit of claim 62, wherein said power source is a flexible thin layer electrochemical cell.

72-73. (Cancelled)

74. (Withdrawn) The kit of claim 62, wherein the kit is for transdermal or intradermal delivery of at least one substance.

75-79. (Cancelled)

80. (Withdrawn) The kit of claim 74, wherein said at least one separator is for deposition upon the skin portion such that, upon contact by said at least one separator with at least one of said at least two electrodes, said electric current causes said transdermal or intradermal delivery of said at least one substance.

81. (Withdrawn) The kit of claim 74, wherein said at least one separator is for deposition on at least one of said at least two electrodes such that, upon contact by said at least one separator with the skin portion, said electric current causes said transdermal or intradermal delivery of said at least one substance.

82-86. (Cancelled)

87. (Withdrawn) The kit of claim 62, wherein said dermal patch is a thin and flexible patch.

88. (Withdrawn) The kit of claim 62, wherein said dermal patch further comprises a patch body and wherein said electrochemical cell and said at least two electrodes are disposed on said patch body in spaced relation to each other to define a gap between said at least two electrodes.

89. (Cancelled)

90. (Withdrawn) The kit of claim 74, wherein said at least one substance is at least one of anti-infectives, antibiotics, antiviral agents, analgesics, fentanyl, sufentanil, buprenorphine, analgesic combinations, anesthetics, anorexics, antiarthritics, antiasthmatic agents, terbutaline, anticonvulsants, antidepressants, antidiabetic agents, anti-diarrheals, antihistamines, anti-inflammatory agents, antimigraine preparations, anti-motion sickness, scopolamine, ondansetron, anti-nauseants, antineoplastics, antiparkinsonism drugs, cardiostimulants, dobutamine, antipruritics, antipsychotics, antipyretics, antispasmodics, gastrointestinal and urinary, anticholinergics, sympathomimetics, xanthine derivatives, cardiovascular preparations, calcium channel blockers, nifedipine, beta-blockers, beta-agonists, salbutamol, ritodrine, antiarrhythmics, antihypertensives, atenolol, ACE inhibitors, diuretics, vasodilators, coronary, peripheral and cerebral, central nervous system stimulants, cough and cold preparations, decongestants, diagnostics, hormones, parathyroid hormone, growth hormone, insulin, hypnotics, immunosuppressives, muscle relaxants, parasympatholytics, parasympathomimetics, anti-oxidants, nicotine, prostaglandins, psychostimulants, sedatives, tranquilizers, skin acting anti-oxidants, carotenoids, ascorbic acid (vitamin C), vitamin E, anti-wrinkling agents, retinoids, retinol (vitamin A alcohol), alpha-hydroxy acids, beta-hydroxy acid, salicylic acid, combination-hydroxy acids and poly-hydroxy acids, and hydrolyzed and soluble collagen, moisturizers, hyaluronic acid, anticellulite agents, aminophyllines, skin bleaching agents, retinoic acid, hydroquinone, peroxides, botanical preparations, extracts of aloe-vera, wild yam, hamamelitanin, ginseng, witch hazel and green tea.

91. (Withdrawn) A method of use of a dermal patch, wherein the dermal patch comprises at least one power source for powering the patch and at least two electrodes electrically coupled to the power source, and a retainer for retaining a substance and for preventing contact between at least one of said at least two electrodes and a skin portion, said method comprising:

(a) positioning the dermal patch such that the electrodes are conductively coupled to the skin portion of the subject; and

(b) delivering an electric current to the skin portion of the subject.

92. (Withdrawn) The method of claim 91, further comprising promoting delivery of at least one substance to the skin portion, wherein said at least one substance is comprised in said conductive fluid.
93. (Withdrawn) The method of claim 92, wherein said at least one substance is delivered transdermally or intradermally.
94. (Withdrawn) A dermal patch comprising at least one power source for powering the patch and at least two electrodes in electrical connection with said power source, said electrodes for electrically coupling to a skin portion of a subject; and a retainer for retaining a substance and for preventing contact between at least one of said at least two electrodes and the skin portion.
95. (Withdrawn) The patch of claim 94 for introducing current and/or voltage to said skin portion of the subject.
96. (Withdrawn) The patch of claim 94 for at least one of dermal delivery, transdermal delivery and intradermal delivery or a combination thereof of the substance to said skin portion of the subject.
97. (Withdrawn) The patch of claim 94, wherein said patch is a thin and flexible patch.
98. (Withdrawn) The patch of claim 94, wherein said at least two electrodes are integrally formed with said power source.
99. (Withdrawn) The patch of claim 94, wherein said patch further comprises a patch body and wherein said power source and said at least two electrodes are disposed on said patch body in spaced relation to each other to define a gap between said at least two electrodes.

100. (Withdrawn) The patch of claim 94, wherein said patch further comprises an attachment mechanism for attaching to said skin portion of the subject.

101. (Withdrawn) The patch of claim 94, wherein said patch further comprises circuitry for controlling said electric current.

102. (Withdrawn) The patch of claim 94, wherein said power source is a flexible thin layer electrochemical cell.

103. (Withdrawn) The patch of claim 102, wherein said flexible thin layer electrochemical cell is a flexible thin layer open liquid state electrochemical cell which comprises a first layer of insoluble negative pole, a second layer of insoluble positive pole and a third layer of aqueous electrolyte, said third layer being disposed between said first and second layers and including:

- (a) a deliquescent material for keeping the open cell wet at all times;
- (b) an electroactive soluble material for obtaining required ionic conductivity; and
- (c) a water-soluble polymer for obtaining a required viscosity for adhering said first and said second layers to said third layer.

104. (Withdrawn) The patch of claim 94, packaged and identified for an application selected from the group consisting of a wound healing application, a scar prevention application, a scar reduction application, a tissue repair application, a tissue regeneration application, muscle stimulation, muscle contraction, accelerated bone healing, inhibition of inflammation, facilitation and promotion of metabolic processes, pain alleviation, and treatment of rosacea and telangiectasia.

105. (Withdrawn) The patch of claim 94 further comprising a conductive fluid.

106. (Withdrawn) The patch of claim 105, wherein said conductive fluid further comprises at least one substance and wherein said conductive fluid is preapplied to said at least two electrodes and wherein on contacting said patch with skin an electric current is delivered through said

conductive fluid and skin of a subject so as to transdermally or intradermally deliver said at least one substance.

107. (Withdrawn) The patch of claim 105, wherein said conductive fluid is aqueous hydrogel.

108. (Withdrawn) The patch of claim 106, wherein said substance is selected from the group consisting of a pharmaceutical, a cosmetic, a cosmeceutical and moisture.

109. (Cancelled)

110. (Withdrawn) The dermal patch of claim 94, wherein said at least one substance is at least one of anti-infectives, antibiotics, antiviral agents, analgesics, fentanyl, sufentanil, buprenorphine, analgesic combinations, anesthetics, anorexics, antiarthritics, antiasthmatic agents, terbutaline, anticonvulsants, antidepressants, antidiabetic agents, anti-diarrheals, antihistamines, anti-inflammatory agents, antimigraine preparations, anti-motion sickness, scopolamine, ondansetron, anti-nauseants, anti-neoplastics, anti-parkinsonism drugs, cardiostimulants, dobutamine, anti-pruritics, anti-psychotics, anti-pyretics, anti-spasmodics, gastrointestinal and urinary, anticholinergics, sympathomimetics, xanthine derivatives, cardiovascular preparations, calcium channel blockers, nifedipine, beta-blockers, beta-agonists, salbutamol, ritodrine, anti-arrhythmics, anti-hypertensives, atenolol, ACE inhibitors, diuretics, vasodilators, coronary, peripheral and cerebral, central nervous system stimulants, cough and cold preparations, decongestants, diagnostics, hormones, parathyroid hormone, growth hormone, insulin, hypnotics, immunosuppressives, muscle relaxants, parasympatholytics, parasympathomimetics, anti-oxidants, nicotine, prostaglandins, psychostimulants, sedatives, tranquilizers, skin acting anti-oxidants, carotenoids, ascorbic acid (vitamin C), vitamin E, anti-wrinkling agents, retinoids, retinol (vitamin A alcohol), alpha-hydroxy acids, beta-hydroxy acid, salicylic acid, combination-hydroxy acids and poly-hydroxy acids, and hydrolyzed and soluble collagen, moisturizers, hyaluronic acid, anti-cellulite agents, aminophyllines, skin bleaching

agents, retinoic acid, hydroquinone, peroxides, botanical preparations, extracts of aloe-vera, wild yam, hamamelitanin, ginseng, witch hazel and green tea.

111. (Withdrawn) A thin and flexible dermal patch comprising:

at least one negative electrode and at least one positive electrode for electrical coupling to the skin portion of a subject;

a thin and flexible power source electrically coupled to said at least one negative electrode and said at least one positive electrode, wherein said thin and flexible power source powers the patch; and

a thin retainer comprising a conductive fluid/composition wherein the thin retainer is disposed on at least one of said at least one negative electrode and said at least one positive electrode.

112. (Withdrawn) The thin and flexible patch of claim 111, wherein said at least one negative electrode, said at least one positive electrode and said thin and flexible power source are disposed on a patch body in spaced relation to each other to avoid contact between each of the electrodes.

113. (Withdrawn) The thin and flexible patch of claim 111, wherein said at least one negative electrode and said at least one positive electrode are applied to said patch body using a printing technique.

114. (Cancelled)

115. (Withdrawn) The thin and flexible patch of claim 111, wherein the conductive fluid/composition comprises at least one active substance.

116. (Cancelled)

117. (Withdrawn) The thin and flexible patch of claim 111 for promoting delivery of said an active substance into a skin portion of a subject.

118. (Withdrawn) The thin and flexible patch of claim 111 for delivering an electric current/voltage to a skin portion of a subject.

119-120. (Cancelled)

121. (Withdrawn) The thin and flexible patch of claim 111, wherein said power source comprises a thin and flexible electrochemical cell and wherein said thin and flexible electrochemical cell is a thin and flexible open liquid state electrochemical cell which comprises a first layer of insoluble negative pole, a second layer of insoluble positive pole and a third layer of aqueous electrolyte, said third layer being disposed between said first and second layers and including:

- a deliquescent material for keeping the open cell wet at all times;
- an electroactive soluble material for obtaining required ionic conductivity; and
- a water-soluble polymer for obtaining a required viscosity for adhering said first and said second layers to said third layer.

122. (Cancelled)

123. (Withdrawn) A kit for introduction of an electric current and/or voltage to a skin portion and/or transdermal or intradermal delivery of substances comprising:

- (a) a thin and flexible dermal patch which comprises a power source and at least two electrodes in electrical connection with the power source, said electrodes for electrical coupling with a skin portion of a subject; and
- (b) at least one retainer for retaining a conductive fluid, said conductive fluid being for deposition on at least one of said at least two electrodes and/or topical application onto the skin portion of the subject;

said patch being designed and configured for delivering an electric current through the skin and said conductive fluid, said electric current being for introduction of current and/or voltage to said skin portion and/or transdermal or intradermal delivery of at least one substance.

124. (Withdrawn) A thin and flexible dermal patch comprising at least one thin and flexible power source for powering the patch and at least one positive electrode and one negative electrode in electrical connection with the positive pole and negative pole respectively of said power source, said electrodes for electrically coupling to a skin portion of a subject.

125. (Currently Amended) A dermal patch comprising at least one power source comprising an electrochemical cell for powering the patch, wherein the electrochemical cell comprises a negative pole, a positive pole, and an electrolyte and at least two electrodes spaced apart and in electrical connection with the electrochemical cell, the electrodes for electrically coupling to a skin portion and/or skin appendage of a subject, wherein at least one of the at least two electrodes is integrally formed on or with the electrochemical cell.

126-130. (Cancelled)

131. (Previously Presented) The dermal patch of claim 125 further comprising at least one retainer for retaining a substance and for preventing contact between at least one of the at least two electrodes and the skin portion.

132. (Previously Presented) The dermal patch of claim 125 for introducing current and/or voltage to the skin portion of the subject.

133. (Previously Presented) The dermal patch of claim 125 for at least one of dermal delivery, transdermal delivery and intradermal delivery or a combination thereof of at least one substance to the skin portion of the subject.

134. (Previously Presented) The dermal patch of claim 125, wherein the patch is a thin and flexible patch.

135. (Previously Presented) The dermal patch of claim 125, wherein the at least two electrodes are integrally formed with the electrochemical cell.

136. (Previously Presented) The dermal patch of claim 125, wherein the patch further comprises a patch body and wherein the power source and the at least two electrodes are disposed on the patch body in spaced relation to each other to define a gap between the at least two electrodes.

137. (Previously Presented) The dermal patch of claim 125, wherein the patch further comprises an attachment mechanism for attaching the patch to the skin portion of the subject.

138. (Previously Presented) The dermal patch of claim 132, wherein the patch further comprises circuitry for controlling the current.

139. (Previously Presented) The dermal patch of claim 125, wherein the electrochemical cell comprises a flexible thin layer electrochemical cell.

140. (Previously Presented) The dermal patch of claim 139, wherein the flexible thin layer electrochemical cell is a flexible thin layer open liquid state electrochemical cell which comprises a first layer of insoluble negative pole, a second layer of insoluble positive pole and a third layer of aqueous electrolyte, the third layer being disposed between the first and second layers and including:

- (a) a deliquescent material for keeping the open cell wet at all times;
- (b) an electroactive soluble material for obtaining required ionic conductivity; and
- (c) a water-soluble polymer for obtaining a required viscosity for adhering the first and the second layers to the third layer.

141. (Currently Amended) The dermal patch of claim 125, packaged and identified for an application selected from the group consisting of a wound healing application, a scar prevention application, a scar reduction application, a tissue repair application, a tissue regeneration application, muscle stimulation, muscle contraction, accelerated bone healing, treatment of hyperhidrosis, inhibition of inflammation, facilitation and promotion of metabolic processes, pain alleviation, and treatment of rosacea, wrinkles, skin dryness, skin burns and telangiectasia.

142. (Previously Presented) The dermal patch of claim 125 further comprising a conductive fluid.

143. (Previously Presented) The dermal patch of claim 142, wherein the conductive fluid comprises at least one substance.

144. (Previously Presented) The dermal patch of claim 143 wherein the conductive fluid is preapplied to the at least two electrodes and wherein on contacting the patch with skin an electric current is delivered through the conductive fluid and skin of a subject so as to transdermally or intradermally deliver the at least one substance.

145. (Previously Presented) The dermal patch of claim 142, wherein the conductive fluid is an aqueous hydrogel.

146. (Previously Presented) The dermal patch of claim 133, wherein the at least one substance is selected from the group consisting of a pharmaceutical, a cosmetic, a cosmeceutical and moisture.

147. (Previously Presented) The dermal patch of claim 133 wherein the at least one substance is at least one of an analgesic, anesthetic, hormone, muscle relaxant, anti-wrinkling agent, moisturizer, anticellulite agent, skin bleaching agent, antibiotic, antiinfective, antiviral agent or salicylic acid.

148. (Previously Presented) The dermal patch of claim 133, wherein the at least one substance is at least one of anti-infectives, antibiotics, antiviral agents, analgesics, fentanyl, sufentanil, buprenorphine, analgesic combinations, anesthetics, anorexics, antiarthritics, antiasthmatic agents, terbutaline, anticonvulsants, antidepressants, antidiabetic agents, anti-diarrheals, antihistamines, anti-inflammatory agents, antimigraine preparations, anti-motion sickness, scopolamine, ondansetron, anti-nauseants, antineoplastics, anti-parkinsonism drugs, cardiostimulants, dobutamine, antipruritics, antipsychotics, antipyretics, antispasmodics, gastrointestinal and urinary, anticholinergics, sympathomimetics, xanthine derivatives, cardiovascular preparations, calcium channel blockers, nifedipine, beta-blockers, beta-agonists, salbutamol, ritodrine, antiarrhythmics, antihypertensives, atenolol, ACE inhibitors, diuretics, vasodilators, coronary, peripheral and cerebral, central nervous system stimulants, cough and cold preparations, decongestants, diagnostics, hormones, parathyroid hormone, growth hormone, insulin, hypnotics, immunosuppressives, muscle relaxants, parasympatholytics, parasympathomimetics, anti-oxidants, nicotine, prostaglandins, psychostimulants, sedatives, tranquilizers, skin acting anti-oxidants, carotenoids, ascorbic acid (vitamin C), vitamin E, anti-wrinkling agents, retinoids, retinol (vitamin A alcohol), alpha-hydroxy acids, beta-hydroxy acid, salicylic acid, combination-hydroxy acids and poly-hydroxy acids, and hydrolyzed and soluble collagen, moisturizers, hyaluronic acid, anticellulite agents, aminophyllines, skin bleaching agents, retinoic acid, hydroquinone, peroxides, botanical preparations, extracts of aloe-vera, wild yam, hamamelitanin, ginseng, witch hazel, water and green tea.

149. (Previously Presented) The dermal patch of claim 136, wherein the at least two electrodes are applied to the patch body using a printing technique.

150. (Previously Presented) The dermal patch of claim 125 for recovery of substances from the body.

151. (Previously Presented) The dermal patch of claim 125, wherein at least one of the at least two electrodes is a terminal of the electrochemical cell.

152. (Previously Presented) The dermal patch of claim 125, wherein the at least two electrodes are both terminals of the electrochemical cell.

153. (Previously Presented) The dermal patch of claim 125, wherein the patch is foldable.

154. (Previously Presented) The dermal patch of claim 125, wherein the power source and the at least two electrodes are the only constituents of the patch.

155. (Previously Presented) The dermal patch of claim 136, wherein the dermal patch is an integrated patch comprising the electrochemical cell and the at least two electrodes applied onto the patch using a printing technology.

156. (Previously Presented) A kit for introduction of an electric current and/or voltage to a skin portion and/or transdermal or intradermal delivery of at least one substance comprising:

- (a) a dermal patch of claim 125; and
- (b) at least one retainer for retaining a conductive fluid.

157. (Previously Presented) The kit of claim 156, wherein the conductive fluid contains the at least one substance and wherein the retainer is a separator for deposition upon the skin portion such that, upon contact by the separator with at least one of the at least two electrodes, the electric current causes the transdermal or intradermal delivery of the at least one substance.

158. (Previously Presented) The kit of claim 156, wherein the conductive fluid contains the at least one substance and wherein the retainer is a separator for deposition on at least one of the at least two electrodes such that, upon contact by the separator with the skin portion, the electric current causes the transdermal or intradermal delivery of the at least one substance.

159. (Previously Presented) The kit of claim 156, wherein the retainer is a separator and the separator is contained in a removable cover.

160. (Previously Presented) A method of use of a dermal patch of claim 125, the method comprising:

- (a) positioning the dermal patch such that the electrodes are conductively coupled to the skin portion of the subject; and
- (b) delivering an electric current to the skin portion of the subject.

161. (Previously Presented) The method of claim 160, further comprising promoting delivery of at least one substance to the skin portion.

162. (New) A dermal patch comprising at least one power source comprising an electrochemical cell for powering the patch and at least two electrodes in electrical connection with the electrochemical cell, the electrodes for electrically coupling to a skin portion of a subject, wherein at least one of the at least two electrodes is integrally formed on or with the electrochemical cell, wherein the electrochemical cell comprises a flexible thin layer open liquid state electrochemical cell which comprises a first layer of insoluble negative pole, a second layer of insoluble positive pole and a third layer of aqueous electrolyte, the third layer being disposed between the first and second layers and including:

- (a) a deliquescent material for keeping the open cell wet at all times;
- (b) an electroactive soluble material for obtaining required ionic conductivity; and
- (c) a water-soluble polymer for obtaining a required viscosity for adhering the first and the second layers to the third layer.

163. (New) A dermal patch comprising at least one power source comprising an electrochemical cell for powering the patch and at least two electrodes in electrical connection with the electrochemical cell, the electrodes for electrically coupling to a skin portion and/or skin appendage of a subject, wherein at least one of the at least two electrodes is integrally formed on or with the electrochemical cell and wherein the patch is foldable.

164. (New) A dermal patch comprising at least one power source comprising an electrochemical cell for powering the patch and at least two electrodes in electrical connection

with the electrochemical cell, the electrodes for electrically coupling to a skin portion of a subject, wherein at least one of the at least two electrodes is integrally formed on or with the electrochemical cell, wherein at least one of the at least two electrodes is printed onto the electrochemical cell.

165. (New) A dermal patch comprising at least one power source comprising an electrochemical cell for powering the patch and at least two electrodes in electrical connection with the electrochemical cell, the electrodes for electrically coupling to a skin portion of a subject, wherein at least one of the at least two electrodes is integrally formed on or with the electrochemical cell, wherein the electrochemical cell comprises a flexible thin layer open electrochemical cell.

166.. (New) The dermal patch of claim 145, wherein the aqueous hydrogel is applied during manufacture of the patch.

167. (New) The method of claim 160, wherein there is no separate step of the user applying hydrogel to the skin or electrode.